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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,036	04/11/2001	Alfred M. Gabriele	02208-1	8351

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EXAMINER
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VERSTEEG, STEVEN H

ART UNIT	PAPER NUMBER
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1753

8

DATE MAILED: 08/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/833,036	Applicant(s) GABRIELE ET AL.	
	Examiner Steven H VerSteeg	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 July 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-24 is/are pending in the application.
- 4a) Of the above claim(s) 16-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,11-13 and 15 is/are rejected.
- 7) ☒ Claim(s) 5-10 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> | 6) <input type="checkbox"/> Other: _____                                    |

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1 and 3-15 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the examination should not be an undue burden on the examiner. This is not found persuasive because a materially different process such as CVD could still make the product. The fact that they are different inventions is the key, not whether or not the search would be burdensome on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

### ***Specification***

2. The abstract of the disclosure is objected to because "following" should be "followed" in line 4. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 4, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 3 and 4 depend from claim 2. Claim 11 depends from claim 3. Claim 2 has been canceled. Therefore, claims 3, 4, and 11 are indefinite. Because claim 2 has been canceled, claims 3, 4, and 11, which depend therefrom, have not been further examined.

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***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,004,672 to D'Ottavio et al. (D'Ottavio).

8. For claim 12, Applicant requires a method comprising providing a substrate, coating at least a portion of the substrate with an electrophoretically applied polymeric precursor, polymerizing the precursor, and elevating the temperature of the coating to at least about 400°F for at least about 6 minutes.

9. For claim 13, Applicant requires applying a layer of metal over at least a portion of the polymeric coating.

10. D'Ottavio discloses providing a substrate, electrophoretically depositing a polymer precursor, polymerizing the precursor, and depositing a copper layer thereon by electroplating (Example 1). After the polymer layer is polymerized, the layer is heated to 200°F for about 5 minutes. 5 minutes is about 6 minutes and 200°F is about 400°F. Therefore, the limitations of claims 12 and 13 are met.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,334,942 B1 to Haba et al. (Haba) in view of US 5,981,079 to Mount, III et al. (Mount).

13. For claim 1, Applicant requires a method of coating a substrate comprising: providing a substrate, forming a polymeric layer by electrophoretically applying a polymeric precursor, polymerizing the precursor, and applying a metal coating to at least a portion of the polymerized layer. The metal coating is applied under sub-atmospheric conditions.

14. Haba discloses a process (col. 5, l. 11) comprising providing a substrate (20), electrophoretically applying a photoresist (24) and polymerizing it (col. 5, l. 27-42), and depositing a metal layer (28) thereon. The metal layer is deposited by electroplating (col. 5, l. 43-44). The metal layer can be gold, osmium, rhodium, platinum, tin, nickel, chromium, and their alloys (col. 5, l. 45-49).

15. Haba does not disclose that the metal layer is formed under sub-atmospheric conditions.

16. Mount discloses that for deposition of aluminum, copper, silver, gold, and chromium, sputtering (which is under vacuum) and electroplating are equivalents (col. 5, l. 15-22).

17. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Haba to deposit the metal layer by sputtering because of the knowledge that sputtering and electroplating are equivalents for depositing metals such as gold, copper, and chromium.

18. For claim 15, Applicant requires a method comprising forming a polymeric coating from an electrophoretically applied polymeric precursor and applying a layer of metal using PVD.

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19. As noted above, Haba discloses electrophoretically depositing a photoresist polymer on to a substrate and then electroplating a metal layer thereon.

20. Haba does not disclose PVD depositing the metal layer, but Mount provides such a motivation.

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Haba to deposit the metal layer by sputtering because of the knowledge that sputtering and electroplating are equivalents for depositing metals such as gold, copper, and chromium.

22. Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,004,672 to D'Ottavio et al. (D'Ottavio) in view of US 5,981,079 to Mount, III et al. (Mount).

23. Claims 1 and 15 are described above.

24. D'Ottavio is described above, but utilizes electroplating to deposit the copper metal layer. Mount is also described above and provides the motivation to utilize sputtering rather than electroplating.

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of D'Ottavio to deposit the metal layer by sputtering because of the knowledge that sputtering and electroplating are equivalents for depositing metals such as gold, copper, and chromium.

*Allowable Subject Matter*

26. Claims 5-10 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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27. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious over the prior art of record to have a method of coating a substrate as claimed by Applicant comprising electrophoretically forming a precursor on a substrate, polymerizing the layer, and then applying a metal layer under sub-atmospheric conditions wherein the substrate is porous and is leveled before the metal layer is deposited.

28. Neither D'Ottavio nor Haba nor Mount disclose or suggest, either individually or when combined, that the substrate should be leveled before the metal layer is applied. The most that is suggested is developing the photoresist and removing the patterned portions.

29. It is also neither anticipated nor obvious over the prior art of record to have a method of coating a surface comprising coating a substrate with an electrophoretically applied polymeric precursor, polymerizing the precursor, elevating the temperature of the polymeric precursor, applying a layer of metal, and then applying a second polymeric coating over the metal.

30. US 5,104,507 to Offenburger suggests two electrophoretically deposited polymeric layers, but the second layer is not deposited onto the metal (col. 3, l. 15-43). Therefore, no reference of record, either individually or when combined, discloses or suggests applying a second polymeric coating over the metal.

### ***Conclusion***

In the event that papers are missing from this communication, please contact the Customer Service Center for Technology Center 1700 at (703) 306-5665.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H VerSteeg whose telephone number is (703) 305-4473. The examiner can normally be reached on Mon - Thurs (7:30 AM - 5:00 PM) & alternate Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Steven H VerSteeg  
Primary Examiner  
Art Unit 1753

shv  
August 19, 2002